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ART. LVI. — *On British Species and Varieties of the Genus Sagina.*

By SAMUEL GIBSON, Esq.

Hebden Bridge, February 10, 1842.

SIR,

The following descriptive list is drawn up from specimens of Sagina in my own herbarium: I have thus endeavoured to furnish a few materials towards the history of this difficult genus. Probably some of the forms may hereafter be considered distinct species; but not presuming to decide on that point, I leave it to the better judgment of others. If you should consider the list worthy a place in the 'Phytologist,' it is at your service.

SAML. GIBSON.

To the Editor of 'The Phytologist.'

Genus. — SAGINA, *Linnæus*.

Capsule 1-celled, 4-valved, many-seeded: petals 4, (shorter than the calyx or entirely wanting): stamens 4: styles 4: sepals 4.

1. S. *apetala*, Linn. Plant annual, glaucous, reclining but not taking root. Stems rough with scattered points: leaves, each tipped with a very distinct awn or bristle, slightly combined by their membranaceous bases, linear, about a quarter of an inch long, fringed at the edges with jointed hairs: flower-stalks erect, smooth, about an inch long: calyx ovate, obtuse, about one third shorter than the capsule; segments with narrow membranaceous margins: petals entirely wanting: seeds nearly smooth, variable in shape, with their edges crenate.

On moist, barren, sandy ground. Common in many parts of Lancashire. I gathered this plant in 1840, on the Bolton road, about two miles from Manchester; and have specimens of it from Marple, &c.

β. *stricta*, mihi. Plant quite upright: stems and leaves ciliated with jointed hairs: flower-stalks set with *stalked glands*: seeds smooth, with their edges dentate.

This variety differs from the above in being always upright, and having glandular flower-stalks. On the muddy banks of the river Mersey, opposite Liverpool, in June, 1831. I gathered this plant in Wallazey Pool, in June, 1841.

γ. *divaricata*, mihi. Plant upright in a young state, decumbent with age: seeds rough, keeled at the back, keel crenate.

This variety is prominently distinguished, not only by its divaricated mode of growth, but by the great dissimilarity of its seeds. It appears to be somewhat rare, as I have specimens from one locality only, namely, the garden walks of P. M. James, Esq., Sumerille Irlams, on the heights near Manchester, communicated to me by *Mr. W. Charlton.*

δ. *prostrata*, mihi. Plant with numerous stems, all spread quite flat on the ground, dark green, hairy: leaves short (about one eighth of an inch long), hairy: flower-stalks and calyces quite smooth: seeds as in *a.*

The prostrate habit of this plant at once distinguishes it from every other form of Sagina apetala. On the walks of neglected gardens in Halifax &c.; apparently not very uncommon, as I have a specimen from Cornwall, and have also seen others from Richmond, in Yorkshire.

ε. *setacea*, mihi. Plant upright, *very slender*, from two to five inches high: stems few, smooth, leaves about one quarter of an inch long, narrow, membranaceous at the base, their edges ciliated, each tipped with a very short bristle: seeds smooth, dentate on their back.

The very slender and upright habit of this at once distinguishes it from every other form of the plant. Apparently not very common: my specimens are from Richmond in Yorkshire.

ζ. *glabra.* (Sagina apetala, β. *glabra*, Babington, 'Primitiæ Floræ Sarnicæ,' p. 15). Plant nearly upright: stems and leaves smooth, the latter tipped with a very distinct bristle: flower-stalks and calyces set with minute stalked glands, the two outer sepals mucronate.

For specimens of this variety I am indebted to *Mr. Babington;* they are from Jersey.

η. *lævis*, mihi. (Sagina maritima of the Manchester Flora, p. 14). Plant nearly upright, smooth in every part

Closely allied to the foregoing, but differing in the flower-stalks and calyces being destitute of the stalked glands so conspicuous in that variety. This appears to be the most common form of Sagina apetala. Perhaps this and the last might be considered two forms of one distinct species: the two outer sepals of the calyx being mucronate, together with the absence of hairs from the leaves &c., would serve to distinguish them from every other form of Sagina apetala. My specimens are from the walls of Bowden Church-yard, given to me by the author of 'Flora Mancuniensis;' also from Brandon Hill, &c. by *Mr. Grindon;* and Greenwich Park, *Mr. Luxford.* In 1835 I gathered it at Selby, and in 1836 on the magnesian limestone at Garforth, six miles from Leeds.

2. S. *maritima*, Don. Plant annual, smooth. Stems prostrate, divaricated: leaves short, broad in proportion, thick and blunt, combined by their membranous bases: flower-stalks slender: segments

of the calyx broad, ovate, obtuse, with narrow membranous edges: petals none: capsule shorter than the calyx.

All my Scottish specimens answer to the above description.

β. *erecta*, mihi. Plant upright, smooth, very slender: leaves narrow, long in proportion, tipped with a very short bristle: capsule longer than the calyx.

The more slender and upright habit of this variety, combined with its longer capsule, will serve to distinguish it from the above. My specimens of this plant I gathered in Wallazey Pool, Cheshire, in June, 1841, where I found all our three species of Sagina growing together. My Warrington specimens differ but little from this. I have also a specimen of the Sagina maritima from Devonport, communicated to me by Mr. Luxford, that exactly agrees with my Warrington plants.

3. S. *procumbens*, Linn. Perennial. Stems one to ten inches or more in length, spreading on the ground and taking root at their joints, leafy: leaves evergreen, combined at their base by a thin membrane, ribbed, linear, about one to three quarters of an inch in length, very smooth, often tipped with a minute bristle: flower-stalks short, smooth, often drooping: calyx-leaves broad, ovate, obtuse, with very narrow membranous edges: petals (if present) ovate, obtuse, about half the length of the calyx.

This species grows in damp shady places everywhere. Smith tells us that the leaves of Sagina procumbens are three-ribbed; this character I have not been able to find in any of the forms of the plant: nor have I ever been able to find the seeds of any species of Sagina bordered with a black ring.

β. *pentandra*, mihi.

This differs from the above only in having a fifth part added to the whole fructification. Rare: my specimens I found at Dob-royd near Todmorden, in July, 1840.

γ. *nodosa*, mihi. Stems procumbent, densely crowded, strong and woody, bearing at their joints moss-like tufts of leaves, which are about half an inch in length, each tuft bearing a solitary flower-stalk.

This singular-looking variety I found in the town of Malton, September, 1838.

δ. *maritima*, mihi. Root branched at the crown: stems few, very short, prostrate, disposed in a circular form.

The very small size of this variety, combined with its circular mode of growth, will at once distinguish it from the common state of the plant: probably the maritime locality of this little variety will account for the difference. Found at Crosby, near Liverpool, in June, 1841.

ε. *spinosa*, mihi. (Sagina procumbens, var. β. *spinosa*, Baines's 'Flora of Yorkshire.')

This differs from the normal state of Sagina procumbens in the edges of the leaves being margined with minute diaphanous spines. Found at Halifax, Shibden, near Leeds, Hebden Bridge, &c. &c.

Art. LVII. — *A List of Plants met with in the neighbourhood of Swansea, Glamorganshire.* By J. W. G. Gutch, Esq.

(Concluded from p. 145).

Arum maculatum. Common.
Acorus Calamus. Near Britton Ferry, (Mr. Player).
Typha latifolia and *angustifolia.* Cromlyn Bog, in abundance and great luxuriance.
Sparganium ramosum and *simplex.* Near Singleton and Neath.
——— *natans.* Cromlyn Bog and Singleton Marsh, in the old Red-jacket Canal.
Potamogeton pusillus and *crispus.* Neath Canal.
——— *heterophyllus* and *natans.* Cromlyn Bog.
Ruppia maritima. In the Neath Canal.
Triglochin maritimum and *palustre.* Cromlyn Bog and Loughor Marsh.
Alisma Plantago. Ditches and marsh near Singleton.
——— *natans.* Cromlyn Bog and near Singleton.
——— *ranunculoides.* Sketty Bog; ditches near Singleton; Cromlyn Bog. Formerly plentiful on the boggy parts of Sketty Burrows, which are now enclosed; and found by Mr. Moggridge in Tennant's Canal, near Coed-y-allt, (Dillwyn).
Iris Pseudacorus. Common on all the marshy ground near Swansea, Mumbles road and Cromlyn Bog.
— *fœtidissima.* At Gelly Evan, near Penllergare, where the Spanish Iris xiphioides has continued to flourish with it for more than thirty years at least. Iris fœtidissima also grows in Gower, (Dillwyn).
Spiranthes autumnalis. On the Town Hill and Mumbles.
Neottia Nidus-avis. In a small wood near Pontardawe, (Dillwyn); and in woods about Pont nedd Vechn, Ystradgunlais and Penrice.
Ophrys apifera. On the lawn and in the wood of Penrice Castle, (Dillwyn).
Asparagus officinalis. Near Loughor, and also on Worms Head and the coast near. Meadows between Cowbridge and the sea, about Cardiff, and at Singleton. In Martyn's edition of Miller's 'Gardener's Dictionary' it is denied that the "sparrow-grass" of our gardens is the same species; and it would be interesting to ascertain whether the young shoots of the wild plant possess the same flavour, and the effect of removing them to a richer soil.
Allium vineale. Common near Port Tennant.
Scilla verna. On the lime-stone hill between the Mumbles and the light-house; on the Worms Head and other places in Gower, plentifully.
Paris quadrifolia. In the woods about Britton Ferry and near Kilvay Bridge, in Nicholston wood and other woods in Gower. It not unfrequently occurs with five leaves; and the Rev. G. E. Smith, in his Catalogue of the Phænogamous Plants of South Kent, says that the flower then frequently follows the quinary division, presenting five sepals, five petals, ten stamens, five styles and a five-celled capsule. About Devon I have frequently found the plant with six, and sometimes with seven leaves, and have never observed any variation from the usual quaternary arrangement of the flowers, (Dillwyn).
Tamus communis. Near Singleton.
Butomus umbellatus. Cromlyn Bog and Neath Canal.
Juncus acutus. Neath Canal, and sand hills of Cromlyn Bog and Newton Nottage.

Juncus conglomeratus. Near Kilvey Hill.
—— *bufonius.* Near Neath Canal.
—— *lampocarpus.* Near Cwmbola Colliery.
—— *glaucus, effusus, compressus* and *uliginosus.*
Narthecium ossifragum. Near Cwmbola, in the boggy ground and on the Town Hill.
Rhynchospora alba. Singleton.
Eleocharis palustris and *multicaulis.* Neath Canal and Singleton.
——— *acicularis.* Town Hill, Port Tennant, Sketty and near Fenoni.
Cladium Mariscus. In great luxuriance on Cromlyn Bog.
Isolepis setacea and *Savii.*
Scirpus lacustris. Near Uplands, on the road from Fenoni.
——— *cæspitosus.* Town Hill.
Eriophorum angustifolium. Cromlyn Bog. Common on turfy soil on the mountains, (Dillwyn).
Carex dioica. Cromlyn and Sketty Bogs, and boggy places about the waterfall at Aberdylais, (Dillwyn).
—— *stellulata.* Singleton Marsh.
—— *curta.* Cromlyn and Sketty Bogs.
—— *arenaria* and *vulpina.* Mumbles Road.
—— *pendula.* About the waterfall at Glynhir, near Llandebie, (Dillwyn).
—— *strigosa* and *limosa.* Cromlyn and Sketty Bogs.
—— *recurva.* Singleton Marsh.
—— *riparia.* Cromlyn Bog.
—— *ampullacea.* Cromlyn and Sketty Bogs, and boggy places about the waterfall at Aberdylais, (Dillwyn).
Ophiurus incurvatus. Near Port Tennant.
Lolium perenne. Kilvey Hill and Port Tennant.
Nardus stricta. Sea-side and marsh near Loughor.
Hordeum murinum. Common.
——— *pratense.* Near Port Tennant.
——— *maritimum.* Not uncommon on the sea-shore, (Dillwyn).
Brachypodium sylvaticum. Between Swansea and Port Tennant.
Triticum repens. Mumbles road.
Alopecurus bulbosus. Found in Cardiff Marshes and about the Aust passage, but some specimens that have been gathered in this neighbourhood, and have been mistaken for it, are nothing more than varieties of Alopecurus geniculatus. A. bulbosus appears to have been chiefly founded by Linnæus on the *Gramen myosurioides nodosum* of Ray, Syn. t. 20, fig. 2, which may possibly be different; and as there is no specimen in the Linnæan herbarium, it can only, at most, be regarded as a very doubtful species, (Dillwyn).
——— *geniculatus.* Common near Port Tennant.
Phalaris arundinacea. Near Singleton.
——— *canariensis.* On a dung-hill by the new road to the Infirmary.
Phleum pratense. Near Singleton.
——— *arenarium.* Mumbles road.
Ammophila arundinacea. Banks at Cromlyn and Singleton.
Agrostis vulgaris. In a field near Kilvey Hill and Port Tennant.
——— *alba,* and var. *β. stolonifera.* Near Port Tennant and St. Helen's.

Agrostis Spica-venti ? In a field near Kilvey Hill.
Arundo epigejos. Between the Ferry and Port Tennant.
——— *lanceolatus.* Common.
Arrhenatherum avenaceum. Between the Ferry and Port Tennant, common; Mumbles Road.
Holcus lanatus. Near Port Tennant.
——— *mollis.* Neath Canal.
Cynosurus cristatus. In fields near Singleton and Mumbles road.
Aira præcox. On Kilvey Hill.
——— *cæspitosa.* Common.
Trisetum flavescens. Near Port Tennant.
Phragmites vulgaris. Near Port Tennant and Dannygraig.
Dactylis glomerata. Near Port Tennant. This grass everywhere best resists the copper-smoke.
Bromus asper. Common.
——— *diandrus.* Town Hill.
Festuca vivipara. On Cefn Bryn; and it appears to me to be nothing more than a variety of Festuca ovina, (Dillwyn).
——— *duriuscula.* Near Singleton and about Port Tennant.
——— *gigantea.* Common.
——— *bromoides.* On the sand hills and road-side.
——— *loliacea.* In moist pastures about Pont Nedd Vechn, on the skirt of the wood near the four-mile stone by the side of the Gower road from Swansea, and several other places, (Dillwyn).
Glyceria aquatica. Cromlyn Bog and banks of Neath Canal.
——— *fluitans.*
Sclerochloa loliacea. Between the Infirmary and the sea-shore at Singleton, and at Penrice, where it was found by Dr. Turton.
——— *rigida.*
——— *distans,* (retroflexa, *Curt.*) Llandwr Marsh.
Poa trivialis, pratensis and *annua.*
Scolopendrium vulgare. On old walls and the fissures of wells, not uncommon.
Ceterach officinarum. Near Park, Gower Inn, &c., not common.
Polypodium vulgare. Cromlyn Bog.
——— ——— var. *γ. cambricum.* On rocks in the Neath Valley. I have occasionally met with a barren frond more or less laciniated, (Dillwyn).
——— *Phegopteris.* About Uscoed Eynon Garn, Uscoed Hendry and the Ladies' Fall, near Pont Nedd Vechn, and about the waterfall at Glynhir, near Landebie, (Dillwyn).
——— *Dryopteris.* On rocks in the deep glens about Pont Nedd Vechn, (Dill.)
Polystichum Lonchitis. Cilhepste Falls, (Mr. Player).
——— *lobatum.* Not uncommon on shady hedge-banks.
Lastræa Oreopteris. Plentiful in hedges on Town Hill.
——— *Thelypteris.* Cwmbola, Sketty bogs and marshy ground in the neighbourhood
——— *Filix-mas.* Everywhere.
——— *spinulosa,* var. *β. dilatata.* Cwmbola.
Cystopteris fragilis, var. *γ. dentata.* Kilvey Hill.
Asplenium Trichomanes. Common near Britton Ferry and Gower Inn.

Asplenium viride. In crevices of the rocks at the upper Cilhepste waterfall, near Pont Nedd Vechn, and at Darran yr Ogof, near Ystradgunlais, (Dillwyn).

——— *marinum.* On rocks and walls near Oystermouth, and along the coast of Gower, common, (Dillwyn). Very plentiful in Bacon's Hole.

——— *Ruta-muraria.* Common on walls near Swansea.

——— *lanceolatum.* Town Hill, near Swansea.

——— *Adiantum-nigrum.* Park and Pennard.

Athyrium Filix-femina. Town Hill.

Pteris aquilina. Town Hill.

Lomaria spicant. Common in the hedges.

Adiantum Capillus-Veneris. Common on the cliffs of lias at the eastern end of the county. I have never seen it on mountain limestone, or nearer to Swansea than Dunraven, (Dillwyn).

Osmunda regalis. Common and in great luxuriance in ditches by the road-side and other moist places. In the summer of 1839 I found, near Cwmbola, the root of one plant measuring at least between four and five feet in circumference.

Botrychium Lunaria. On the lawn in front of Penrice Castle, and occasionally found in Nicholston Wood, and other woods in the neighbourhood, (Dillwyn).

Pilularia globulifera. About the borders of Llynfach, on the mountain eastward above Aberpergwm, (Dillwyn).

Equisetum fluviatile. Cromlyn Bog and other bogs in the neighbourhood.

——— *arvense* and *palustre.* Near Singleton.

——— *sylvaticum.* Near Cwmbola; Drymma wood, between Neath and Swansea.

——— *limosum.* Banks of Neath Canal.

——— *hyemale.* Penllergare and Cromlyn Bog, where Mr. Moggridge states it to be abundant.

Andræa alpina. About Llyn Vach, near Aberpergwm.

Dyphyscium foliosum. Plentiful on rocks at the waterfalls about Pont nedd Fiscke, and at a small fall on Bryn Cois; near Cadoxton, (Dillwyn).

Tetraphis pellucida. On a decaying tree near Pont Nedd Vechn; and it has been found by Mr. Woods, with Funaria Muhlenbergii, about the ruins of Caerphilly Castle, (Dillwyn).

Weissia verticillata. Found by Mr. Woods on the rocks about Barry Island, and I suspect that a species which has been gathered from the rocks in Gower, is the same. I believe Grimmia maritima has also been found in this neighbourhood.

Trichostomum polyphyllum. On rocks about Pont Nedd Vechn, and several other places, (Dillwyn).

Dicranum cerviculatum. On dry turfy banks in several places, and is probably common, (Dillwyn).

——— *heteromallum.* Town Hill.

Tortula unguiculata var. *humilis.* On a hedge-bank near St. Helen's, and appears to me to be different from T. unguiculata, (Mr. Ralfs).

Polytrichum commune and *urnigerum.* Plentiful about the waterfalls in the neighbourhood of Pont Nedd Vechn, (Dillwyn).

Bryum ventricosum. About Uscoed Hendry, near Ystradgunlais, and the waterfalls about Pont Nedd Vechn.

—— *ligulatum.* Britton Ferry.

Bartramia pomiformis var. *crispa.* On hedge-banks near Penllergare, (Dillwyn).

Bartramia ithyphylla. On rocks above Uscoed Hendry, near Ystradgunlais and Pont Nedd Vechn, (Dillwyn).

Pterogonium Smithii. Plentiful on the trees between the house and gardens of Penrice Castle.

Hypnum populeum. Gathered by myself many years ago in a wood near Bryn Mill, and I believe it has been found in Cline Wood, and other places, (Dillwyn).

——— *alpinum.* Gathered by Mr. Woods at Uscoed Eynon Gam, and by myself at Darran yr Ogof, above Ystradgunlais, and it appears to us to be distinct from Hyp. plumosum, (Dillwyn).

——— *sericeum.* Mumbles Castle and Common.

——— *commutatum.* On wet rocks at Darran yr Ogof, and is quite distinct from Hyp. filicinum, which grows about Uscoed Eynon Gam, (Dillwyn).

Marchantia polymorpha and *hemisphærica.* Cromlyn Bog.

Jungermannia asplenioides and *epiphylla.*

Endocarpon miniatum. Mumbles Castle.

Parmelia saxatilis.

Peltidea venosa. On Pennard Castle.

Cladonia uncialis. Swansea sands.

Chara translucens. Found by Mr. Ralfs in Cromlyn Bog.

—— *flexilis* and *hispida.* Pools in Cromlyn Bog and canal.

—— *vulgaris.* Port Tennant.

Halidrys siliquosa. Near Mumbles light-house.

Fucus vesiculosus, serratus and *canaliculatus.* Mumbles and Swansea sands.

Himanthalia Lorea. Not unfrequently washed on shore during storms at sea.

Desmarestia ligulata. Not unfrequently picked up, particularly after a storm in the summer months, on the shores of the Mumbles and Caswell Bay, but I do not recollect having found it in a growing state, (Mr. Ralfs).

Dichloria viridis. On the shore, among rejectamenta of the sea; not common.

Elaionema villosum. Rocks in the sea, about the Mumbles Point; not common.

Dictyota dichotoma. On rocks in the sea, not uncommon.

——— *atomaria.* In pools among the rocks by the Worms Head, (Dillwyn). In Bracelet Bay, abundant and very fine.

Chorda Filum. Swansea sands.

Cladostephus verticillatus. On rocks in the sea on the coast of Gower, but not so common as C. spongiosus, which abounds on this and I believe on every other shore, (Dillwyn).

Sphacelaria filicina. Found in a pool at Bracelet Bay.

———— *scoparia* and *cirrhosa.* Bracelet Bay; pools among rocks at Mumbles Point.

Dumontia filiformis. Bracelet Bay; the Mumbles.

——— ——— *β. crispata.* On rocks in the sea, not uncommon.

Halymenia furcellata. Occasionally found among the rejectamenta on the sea-shore.

Iridæa edulis. Near the Mumbles light-house.

Polyides rotundus. Bracelet Bay, and near the Mumbles light-house.

Furcellaria fastigiata. Swansea sands; in pools among the rocks at the Worms Head.

Delesseria sanguinea. Pools in Bracelet Bay. This beautiful species is not unfrequently thrown on the sea-shore.

——— *sinuosa.* Pools by the Mumbles light-house; and it sometimes attains the length of 5 or 6 inches in some large sheltered pools among the rocks at the Worms Head, (Dillwyn).

Delesseria Hypoglossum. Pools in Bracelet Bay; abundant among the rejectamenta on the sea-shore.

Nitophyllum punctatum. This has frequently been found among the rejectamenta on the sea-shore, (Dillwyn).

——— *Gmelini.* Pools by Mumbles light-house and in Bracelet Bay.

——— *laceratum.* Pools in Bracelet Bay, where I have gathered some particularly fine specimens.

Rhodomenia Palmetta. Bracelet Bay.

——— *ciliata* and *palmata.* Mumbles light-house.

Plocamium coccineum. Mumbles; Langdon Bay.

Rhodomela subfusca. Bracelet Bay.

Laurencia obtusa. Found among rejectamenta at the Worms Head, (Dillwyn).

——— *dasyphylla.* On rocks in the sea at the Mumbles, (Dillwyn).

Chylocladia ovalis. Pools among the rocks in Caswell Bay, and about the Worms Head.

——— *kaliformis.* Sometimes found among the rejectamenta of the sea, (Dill.)

——— *articulata.* Bracelet Bay.

Gigartina confervoides and *plicata.* Bracelet Bay.

Chondrus mamillosus and *crispus.* Swansea sands and Bracelet Bay.

Phyllophora rubens. Mumbles; rocks in the sea at the Worms Head.

Gelidium corneum. Bracelet Bay; rocks in the sea at the Worms Head.

Ptilota plumosa. On rocks in the sea; and the var. *β. capillaris* of Turner, with the frond jointed much in the manner of some Confervæ, is very abundant, (Dillw.)

Polysiphonia parasitica. Among the rejectamenta of the sea, not common, (Dillwyn). By the Mumbles light-house.

——— *atrorubescens.* On rocks in the sea along the coast of Gower, (Dillwyn).

——— *nigrescens, fastigiata* and *elongata.* Bracelet Bay.

——— *urceolata* var. *β. patens.* On stems of Laminaria digitata in Bracelet Bay.

Dasya coccinea. Bracelet Bay.

Ceramium rubrum. Swansea sands.

——— *ciliatum.* This beautiful species grows with Cer. diaphanum, in great perfection, in the rocky pools about the Worms Head.

Griffithsia equisetifolia. Rocks in the sea, not uncommon.

——— *setacea.* Bracelet Bay and on the coast of Gower.

Callithamnion plumula. Bracelet Bay; poor specimens.

——— *roseum.* Rocks in the sea, along the coast of Gower, not very common, (Dillwyn).

——— *polyspermum.* Common on rocks near high-water mark.

——— *tetricum.* Bracelet Bay and Mumbles light-house.

——— *tetragonum.* In pools among the rocks in Llanglan and Caswell Bays, and elsewhere on the coast of Gower; generally parasitical on a Fucus.

——— *thuyoides, Turneri* and *Rothii.* Bracelet Bay.

——— *repens.* In the sea; common on other Algæ, (Dillwyn).

——— *purpureum.* In the cavern under the Mumbles light-house, and other caverns in Gower, where it gives the rocks almost the appearance of being covered with purple velvet, (Dillwyn).

Callithamnion lanuginosum. By the Mumbles light-house.

Batrachospermum moniliforme. In a small brook that runs to the upper end of Cline Wood, and other clear streams, (Dillwyn).

Bulbochæte setigera. Found by Mr. W. W. Young, in a rivulet near Cadoxton, (Dill).

Draparnaldia glomerata. In a small stream which crosses the Gower road, on Cline Common. Conferva mutabilis of the 'British Confervæ' is different, and is generally a much more common species, (Dillwyn).

——— *tenuis.* In rivulets and springs, growing on various substances, and I rather doubt whether it belongs to this genus, (Dillwyn).

Chætophora endiviæfolia. Cromlyn Bog, near the first bridge on the right hand side going to Neath.

Conferva fontinalis. In a small piece of *new* garden-ground on the road to Mumbles, formerly waste land.

——— *vesicata*, (alternata, *Dillw.*) In a rivulet near Swansea, (Dillwyn).

——— *tripartita.* In ditches between Pontardulais and the sea, and it may possibly be a variety of Conf. rivularis, (Dillwyn).

——— *dissiliens.* On aquatic plants in ditches on Cromlyn Bog, (Dillwyn).

——— *tortuosa.* Rocks in the sea on the coast of Gower.

——— *implexa.* By the Mumbles light-house.

——— *melagonium.* In almost all the pools near low-water mark by the Mumbles light-house and Bracelet Bay, but seldom more than a few threads in a pool.

——— *ærea.* Pools near high-water mark, at Mumbles and by Salt-house Point.

——— *flacca.* In the sea, parasitical on other Algæ, (Dillwyn).

——— *fucicola.* By the Mumbles light-house.

——— *flaccida.* On Halidrys siliquosa, in a pool near the Mumbles light-house; found by Mr. Ralfs, who had never before seen it except on Cystoseira.

——— *curta.* In the sea, parasitical on Fuci, not uncommon, (Dillwyn).

——— *carnea.* On marine Conferveæ in the river near Loughor, (Dillwyn).

——— *crispata.* Found by Mr. W. W. Young, in pools and ditches near Newton Nottage, (Dillwyn).

——— *pellucida.* Found among rejectamenta of the sea in Caswell Bay.

——— *diffusa.* On rocks in the sea, (Dillwyn).

——— *rupestris.* Mumbles.

——— *lætevirens.* Common on rocks in the sea, and I believe it to be quite distinct from Conferva glomerata, (Dillwyn).

——— *lanosa.* By Mumbles light-house.

Sphæroplea punctalis. In a pool on the moor north of Cefn Bryn, where, soon after my work on the British Conferveæ went to press, I first found it with the filaments conjugated, (Dillwyn).

Codium tomentosum. Among the rejectamenta of the sea, rare, (Dillwyn).

Bryopsis plumosa. Near Mumbles light-house, in Bracelet Bay.

Vaucheria multicapsularis. Common on clayey banks in high and exposed situations throughout the neighbourhood.

Stigonema atro-virens. On wet rocks which form the banks of the river above the fall at Aberdylais, and other similar situations.

Scytonema myochrous. In a mountain torrent near Pont Nedd Vechn. I cannot but think it has much affinity with this genus, and have a note that it belongs, as also on the authority of Miss Hutchins's Conferva scopulorum, to the section Coadonatæ of my arrangement, (Dillwyn).

Calothrix nivea. Plentiful in the sulphur-springs of Llanwrtyd, and it abounds in other sulphur-springs, both in Great Britain and on the continent, nor have I ever seen it in any water that is not impregnated with sulphuretted hydrogen, (Dillwyn).

——— *distorta.* Found by Mr. W. W. Young in a rivulet near Cadoxton, (Dill.)

——— *mirabilis.* On stones and stems of Musci in the stream which runs through the wood at Penllergare, (Dillwyn).

Oscillatoria vaginata. Plentiful on rocks and stones in the river which runs through the wood at Penllergare.

Porphyra laciniata.

Ulva latissima and *Linza.* Mumbles, the latter by the light-house.

Bangia fusco-purpurea. Discovered by Mr. W. W. Young on lime-stone rocks about high-water mark, near Dunraven Castle; and my Conferva atro-purpurea may possibly belong to the same species, (Dillwyn).

Enteromorpha compressa. Bracelet Bay.

Mycinema fulvum. On the ruins of Oystermouth Castle, and the chapter-house at Maryam.

Chroolepus aureus. On stones by the side of the Gower road, near the 4th mile-stone from Swansea, and some other shady places, (Dillwyn).

Protonema umbrosum. Boggy ground by Singleton wood, and at Penllergare, (Dill.)

——— *muscicola.* First discovered on hedge-banks in a lane on high ground between Gower and Loughor roads, and it is common, growing generally on mosses, in the woods at Penllergare, (Dillwyn).

Desmidium Swartzii and *mucosum.* Cromlyn Bog.

Isthmia obliquata, *Diatoma marinum* and *Gomphonema paradoxum.* Bracelet Bay.

Schizonema Smithii. Bracelet Bay, and pools among rocks at Mumbles Point.

——— *Dillwynii.* On rocks near low-water mark under the Mumbles light-house.

J. W. G. Gutch.

Art. LVIII.— *Varieties.*

124. *Chrysosplenium alternifolium* is found growing on the borders of a stream in Ashworth wood, two miles from Bury, Lancashire, along with Chrys. oppositifolium. Here also I have found a variety of the last-named plant, a specimen of which I send you, with *three* instead of *two* opposite leaves.—*N. Buckley; 22, Grafton St. Fitzroy Square, December* 4, 1841.

125. *Note on Primula elatior, &c.** 'The Phytologist' appears to me to offer to botanists, particularly those residing in the country, great facilities for making known any observations they may make relative to the science, and especially with regard to our indigenous plants; and to afford such persons a valuable medium through which they may communicate, and direct the attention of others to, any particular circumstances connected with the habitats of doubtful species. By the publication of such

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* See also pp. 191 and 192.

facts, sufficient data might in time be gained to enable botanists to arrive at some just conclusion as to the merits of the individuals in question. The furtherance of this design is the object I have in view in writing this letter; the immediate subject of which is an account of the conditions under which I have found Primula elatior growing, and which, in my opinion, bear much on the question of its right to be considered as a distinct species, or as a hybrid production between P. veris and P. vulgaris. The only locality in which I have chanced to find P. elatior, has been at Chinham, near Basingstoke, Hants, where I have found it in tolerable abundance for several successive years. The meadow in which it grows is, as most of the meadows in our "woodlands" are, surrounded either by hedgerows or coppices, which distribution of wood and meadow is peculiarly favourable for the hybridization of such plants as P. veris and P. vulgaris; the former growing in abundance in the open meadows, and the latter in equal profusion in the hedgerows &c., while the two species intermix, as might be expected, along the border of the field, in which situation the oxlip is found, not extending into the meadow with the cowslip, nor into the wood with the primrose, which it might be expected occasionally to do, were it a distinct plant. Having found the oxlip under the conditions above mentioned, I have for some time considered it in my own mind as a hybrid production; being however aware that it is unsafe to draw conclusions from a solitary instance, I send this communication to your journal, in the hope that some of your correspondents may be induced to detail any circumstances under which the plant may have occurred to them, with a view to the settlement of the question. In the same situation I have not unfrequently met with the variety which has both the single and the manyflowered stalks on the same individual.—*Robt. Southey Hill; Teddington, February* 21, 1842.

126. *Seasons of Crocus nudiflorus.* Miss Worsley was probably correct in supposing that the longer-leaved Crocuses in Nottingham meadows, were plants of Crocus nudiflorus, (Phytol. 167). The leaves of that species appear above the ground in winter, and are in perfection about March or April, lasting some time longer. They are thus much forwarder in their growth than are those of C. vernus, at the usual time of flowering for the latter species. The root (or, technically, the *cormus*, not root) of C. nudiflorus appears to be naturally less than that of C. vernus, and it would necessarily be small in the early part of the year, when the new bulb was forming. It is well known to every botanical physiologist (though I have had to explain this to each of three gardeners successively in my service, who injured the flowering of the plants through ignorance of the fact) that the Crocus forms an entirely new cormus every year; the new one growing at the bases of the leaves, and within the pale sheaths that envelope the lower parts of the leaves. The position of the new cormus is immediately above the old one, which gradually withers away, and finally drops off in the shape of a flat plate or scale from the base of the new one. It is stated, indeed, in Mr. Francis's recently published 'Grammar of Botany,' that the new cormus is developed underneath the old one; but this is impossible physiologically, as the slightest reflection must convince any botanist at all conversant with the laws of vegetable development. Should this paragraph be printed in 'The Phytologist' for April, it may be suggested to any young botanical readers, to pull up a common crocus, and examine the half-grown new, and the half-withered old cormus. The former will be found uppermost, and its position at the bases of the leaves will illustrate the ordinary formation of the stems of Monocotyledonous plants; the crocus "root," as it is commonly called, be-

ing a flattened palm-stem in miniature.—*Hewett C. Watson; Thames Ditton, March* 2, 1842.

127. *The Genus Tilia.* Sir William Hooker still appears to class the three species (if species we must call them) among the introduced trees of Britain; all of them being distinguished by the (*) in the last edition of the 'British Flora.' Mr. Lees and Dr. Bromfield have half convinced me that Tilia parvifolia and T. europæa are genuine Britons; but with regard to T. grandifolia, it seems to me that the evidences are greatly short of proofs. I allude to the genus just now, in order to remark that some of your correspondents probably do not know T. grandifolia; the specimens sent under this name, from the western counties, to the Botanical Society of London, seem all to belong to T. europæa. Specimens should be gathered in seed, when the prominent angles of the fruit in T. grandifolia will prevent ambiguity or error. The number of flowers, the outline of the leaf, and the disposition of the hairs, are too variable to be relied on as certain characters. There are so few really natural woods in England, that the existence of a wood of lime-trees almost authorizes a conclusion that the wood was originally a plantation. Our remote forefathers did not plant the same trees that we do, nor for the same purposes. With them a quick-growing tree might have been better worth planting than one of slow growth, even though producing superior timber.—*Id.*

128. *Discovery of Leskea pulvinata*, Wahl. As the addition of Leskea pulvinata (Wahl. in 'Flora Lapponica,' 369) to the British Flora has not hitherto been announced, I may state that I had the good fortune to discover it near York, on the 30th of October, 1841; and have since ascertained it to occur abundantly about the roots of trees, and on low bushes in situations liable to be inundated by the Ouse. I forbear at present offering any description of this elegant little moss, as I have not yet gathered fruit with perfect *opercula*, and cannot hope to do so earlier than September next. Its closest affinity is with Leskea polycarpa, Hedw. (Hypnum medium, Dicks.), from which the faintly-nerved (occasionally nerveless) leaves sufficiently distinguish it.—*Richard Spruce; Collegiate School, York, March* 4, 1842.

129. *The Council of the Botanical Society of London* have issued a set of "Regulations for the Exchange and Distribution of Specimens." These Regulations are chiefly interesting to members, being intended for their guidance in the exchange of plants with the Society. We are glad to see that the Council intend to follow up the frequently-expressed determination of the Committee of the Botanical Society of Edinburgh, to reject all imperfect and ill-dried specimens that may be sent in. The necessity for this public expression of such a determination on the part of the two Societies, shows how little understood is the really simple and easy process of drying plants.

ART. LIX.—*Proceedings of Societies.*

BOTANICAL SOCIETY OF EDINBURGH.

Thursday, January 11, 1842.—Professor Christison in the Chair. The following papers were read.

1. *Notes on preserving the Colour of certain Vegetables by immersing them in hot water:* by Mr. Evans. It is well known to every one who has had any experience in the drying of specimens, that, while many plants are easily preserved by the ordinary means of placing them between layers of absorbent paper, and subjecting them to certain degrees of pressure—there are others that cannot be so readily dried; and some are even so constant in their tendency to turn black in drying, that this feature has been deemed characteristic of them. The use of hot water, as a means of accelerating the process of desiccation in certain vegetables, has been long known to botanists; but the author is not aware of its having been employed, to any extent at least, as a means of preserving their colours. To Mr. Peter Henderson, one of the gardeners at Melville Cas-

tle, the chief merit of this application is due—he having, last summer, succeeded by it in preserving *Lathræa squamaria* and some other plants, which ordinarily become black in drying, particularly *Asperula odorata, Melampyrum pratense, Agraphis nutans, Rhinanthus crista-galli*, and several Orchideæ. During the summer and autumn, Mr. Evans tried the same method, and found that, besides the greater beauty of the specimens thus treated, they could be dried in nearly one half of the time usually required, as also that, from the power of hot water in destroying rigidity, they were much more easily arranged on the drying paper. Mr. Evans observed that while he and his friend, in pursuing this method, were guided almost entirely by the nature of the plants subjected to the process, they considered from twenty to thirty seconds a medium time to keep Orchideæ and other plants of a robust and fleshy nature in the water, which was always kept boiling; while a mere dip was found sufficient for those of a more delicate structure. He is, however, of opinion that the success of their method is not to be entirely attributed either to the temperature of the water used, or the exact time the plants are kept in it, but depends much on the frequent changing, for some time, of the paper in which they are afterwards placed; as unless this is strictly attended to, the specimens will be speedily destroyed by the great quantity of water with which they are at first surrounded. It has been recommended, as a means of freeing the plants from external moisture before placing them in the drying paper, to press them gently between cloths; and this he considers beneficial for plants of a robust nature, but rather injurious to the more delicate ones,—to these he merely gives a gentle shake, but changes the papers sooner about them than the others. Mr. Evans concluded by observing that, besides the utility of this method for retaining the colour of the leaves of such plants as naturally become *black* in drying, it will be found serviceable in preserving the *blue* colour of the corollas of Campanulas and some other plants, which rather incline to turn *white.*

The specimens exhibited by Mr. Evans in illustration of his success, were most beautiful—the colour being in almost all of them perfectly retained; and to show that it was their previous immersion in *hot* water which had effected this object, he had purposely kept some portions of them out of the water, and in such instances, *only* the immersed parts had retained their natural colour.

2. *Notice relative to certain Species found in the Parish of Alvah, Banffshire; with a list of Plants observed in that parish:* by the Rev. A. Dodds. Communicated by Mr. W. A. Stables.—The chief interest of this paper arose from the contrast which it presented between the south and north parts of Scotland, in regard to the occurrence and comparative frequency of several species: the recent occurrence of some which have now become generally disseminated, to the farmer's great annoyance, such as *Senecio Jacobœa*, and the gradual disappearance of others which were formerly common, as *Arctium Lappa*, &c.

3. *Description, with drawing, of a Vegetable found on the Gills and Fins of a Goldfish:* by Mr. Goodsir.—In this interesting paper Mr. Goodsir gave a minute description of the parasite, explaining practically its form, structure, mode of fructification, &c., but the fish having died during its conveyance to town, and putrefaction having commenced before he saw it, his observations were necessarily imperfect on some points which he had felt anxious to illustrate. Professor Christison stated, that above a year ago he had noticed a similar parasite on a goldfish, which was entirely covered with it as with a soft down, but the animal's health did not seem at all affected, and he believed it was still alive — nor was the affection communicated to other fishes which were put for some time in the same vessel with it. Mr. Bennet also stated the result of some microscopical observations made by him on Mr. Goodsir's fish, chiefly with reference to the condition of the animal under the invasion of its vegetable foe.

4. *Remarks on the affinities subsisting among Viola lutea, arvensis and tricolor:* by Alexander Seton, Esq., of Mounie.—Mr. Seton says that not having been able to discover any definite or permanent distinction between the plants which had been termed *Viola lutea* and *tricolor*, his attention was directed to their comparative appearance and habits in native situations; and having found all gradations of form, colour and habit between the extreme characters of the perennial plant called *lutea* and the annual called *tricolor*, he had come to the conclusion that they are originally from the same stock or species. As to the form of the stipules, and the different degrees of ramification or divarication in the stem, which Smith, Hooker, and other writers have adopted as distinguishing marks, they are so varying as to be totally unsuitable for that purpose. On the other hand, the *Viola* which has been by some termed *V. arvensis*, but has for the most part been considered as a variety of *V. tricolor*, is so different, and so constant in its general character, that he is inclined to consider it a separate species, though in most particulars extremely similar. It is completely annual, and he has never found it with that multiplicity of stems arising from a spreading root and radicating at their base, which are usual with the two others when they have remained for any length of time undisturbed. It is also taller and more succulent in the herbage than *V. tricolor*, even when the latter is in a rich and congenial soil; and it maintains its characteristics when propagated by the seeds, without those gradations of variety which obliterate distinctions of species: for, having observed it growing in corn-fields and by waysides, along with *V. tricolor*, not only in this kingdom, but also in France, Italy and Germany (in all of which countries both species are common), he uniformly found it retaining its own peculiarities, unblended with those of its congener.—But, though the habits and general appearance of the plants are considerably different, yet their various parts are so much alike that he is unable to find any other descriptive distinction than the proportion between the calyx and corolla. Mr. Seton also notices some remarkable variations in form and habit, obviously arising from soil or locality, in several other plants, such as *Trifolium pratense, Plantago lanceolata*, &c.

5. *Notice respecting some late additions to the Flora of Jersey:* by Mr. Joseph Dickson, Corresponding

Secretary.—The chief interest of this paper consisted, as in the case of No. 2, in the contrast afforded with the vegetation of other parts of Britain; and the author promised to take an early opportunity of extending his observations on this subject.—*Edinburgh Evening Post and Scottish Standard; January* 19, 1842.

Thursday, February 10, 1842.—Professor Graham in the Chair. The following papers were read.

1. *Notices of several Vegetable Monstrosities, with Specimens:* transmitted by Mr. H. C. Watson, and others.—Some of these monstrosities were very interesting, particularly a *Geranium* (*pusillum?*) having the branches terminated by heads or umbels of flowers, through adhesions and excess of parts,—the petals being mostly green or obsolete and the stamens imperfect; *Anthriscus sylvestris* with the umbels proliferous, which was gathered in the wet autumn of 1839; *Linaria repens*—varieties growing together, and showing a gradual approach to *L. vulgaris; Anemone nemorosa*, having the pistils changed to leaves; and *Galium Aparine*, presenting a remarkable *lusus naturæ*, probably caused by insects, the quadrangular stem being twisted, so that the stellate leaves have become secund.

2. Mr. Goodsir described the *Sarcinula Ventriculi*, a new vegetable infusorial allied to the genus *Gonium*, which he had found existing in immense numbers in the fluid ejected, for many weeks, from the stomach of a patient labouring under a particular form of indigestion. This fluid was ejected in large quantities at a time, and had an appearance similar to that of liquor in a state of fermentation. The plant is microscopic—of a square form, and having the parts arranged in a beautifully symmetrical manner in the square. The number of cells of which the plant consists is 64; it propagates by the division of each of these 64 cells into 4 new ones, so as to consist of 256 cells—and simultaneously with this increase in the number of parts, divides spontaneously into four young plants.

The author then adverted to the extremely rapid increase of the plant by such a mode of propagation; and after some observations on the nature of the disease in which it occurred, and of which it probably constituted the cause, he concluded with remarks on the genera of plants and animals to which the new plant is allied.

3. *On Primula veris and allied species:* by the Rev. J. E. Leefe.—Mr. Leefe, after remarking that *Primula inflata*, Lehm, approaches very near to *P. veris*, says—"in the woods at Audley End, Essex, I find a good deal of what is commonly known as *P. elatior* intermixed, but sparingly, with primroses and cowslips. It agrees with the character of *P. elatior*, Jacq., as defined by Koch, but not with the figure in 'English Botany.' The calyx-teeth are more ovate at the base, and the leaves are those of a cowslip—indeed the teeth are almost precisely the same in form as those of the *P. inflata* before alluded to. The limb of the corolla is, however, equal in breadth to more than half of the tube, and is flat, or nearly so."

Professor Henslow writes on this subject:—"With respect to the identity of the three common *Primulæ*, I consider that no argument can be derived from their keeping distinct, in nature or under culture. It is purely a physiological question, whether *all* of them may not originate from the seeds of any one—a question which can only be decided by direct experiment. Let a cowslip be highly manured, and its seeds sown in a shady, moist aspect, and I suspect the chances are in favour of some of them coming up as primroses, or, at least, as oxlips. I have had several independent testimonies to the fact of cowslip roots *changing* to primroses; and until proof, by direct experiment, contradict the experiments of Mr. Herbert and myself, I cannot help believing that the three species (as they are thought) and the polyanthus, are merely races of one species."

4. *On certain Fungi found near Audley End, Essex, &c.:* by the Rev. J. E. Leefe.

5. *Notice of additions to the Flora of Aberdeen:* by Mr. George Dickie, Lecturer on Botany, King's College, Aberdeen.

6. *On the varieties of Dryas octopetala:* by Mr. C. C. Babington, M.A., F.L S., F.G.S., &c. The characters distinguishing these are the proportional length and form of the sepals—the form of the base of the calyx—the form of the leaves—and the pubescence of the petioles. Two of these varieties are apparently confined to Ireland, where Mr. Mackay first noticed the differences existing among plants of this species—and the third is commonly found in alpine situations in England, Scotland, and on the continent of Europe. The latter being the best known form, may be considered as the type of the species, and in it the sepals are acute, and three or four times as long as broad—the base of the calyx being hemispherical; in β the calyx is very nearly the same, being only less acute; but in γ the sepals are scarcely twice as long as broad and very blunt, and the base of the calyx is truncated in a very remarkable manner.—*Id. February* 16, 1842.

Thursday, March 10, 1842.—Professor Christison in the Chair. The following papers were read.

1. *On four new species of British Jungermanniæ;* by Dr. Taylor, Dunkerron. Communicated by Mr. Wm. Gourlie, jun., Glasgow.—Mr. Gourlie read the descriptions of the species, and illustrated them by beautifully preserved specimens. Some of these were so minute as to require microscopic aid for their examination,—a circumstance which enhances the merit of their discovery by Mr. Wilson and Dr. Taylor, who have laboured with so much zeal and success in the field of Cryptogamic Botany. The following were the species described:—*Jungermannia Wilsoni*, Taylor, discovered by William Wilson, Esq., at Cromaglown, Killarney, in November, 1839, and named in compliment to him by Dr. Taylor. *J. stellulifera*, Taylor, also discovered by Mr. Wilson, who found it near Crich, in Derbyshire, in September, 1833. *J. voluta*, Taylor, and *spicata*, Taylor, both discovered near Killarney, in 1841, by Dr. Taylor.

Mr. Gourlie afterwards exhibited specimens of the following plants:—*Leskea pulvinata*, Wahl., discovered near York, by Mr. R. Spruce. *Anictangium Hornschuchianum*, discovered at Cromaglown by Dr.

Taylor; both new to the British Flora. *Jungermannia Balfouriana*, Taylor MSS., a new and highly curious species, brought from New Zealand by Dr. Stanger, and named by Dr. Taylor in compliment to Professor Balfour of Glasgow, from whose herbarium the specimens were communicated.

2. *Notice of the discovery of Herniaria glabra in Berwickshire, by Mr. William Marshall; and of Linnæa borealis in the same county, by Dr. Johnston:* communicated by Dr. Greville. The former of these species has generally been regarded as a native of the south of England, but there seems no reason to doubt its being indigenous in the above station. It was observed that Mr. Gorrie had found the plant abundantly in Perthshire, where he had no doubt it must have escaped from gardens, though now quite naturalized, and almost a weed in some places. The discovery of a new station for the lowly but beautiful plant named in honour of Linnæus, is always a matter of interest, and especially in the south of Scotland, where it occurs very rarely.

3. *On four new species of Desmidium*: by Mr. J. Ralfs.—Mr. Ralfs observes that "this natural genus is not well defined either in Agardh's 'Conspectus Criticus Diatomacearum,' or in any of our British works. Its best distinctive character seems to consist in the crenated appearance of its filaments, which is least evident in *D. mucosum.* These filaments, which are generally twisted in a regular manner, are of a pale green colour, simple, fragile, short and straight. The species are found during a great part of the year in clear shallow pools, or in old peat bogs,—the filaments being scattered in loose bundles in the water, or forming a thin gelatinous fleece at the bottom of the pool." The species ascertained by Mr. Ralfs are named by him *D. cylindricum, mucosum, Swartzii* and *Borreri.*

4. *Illustrative Drawings of Australian Plants:* by the Misses M'Leod of Sydney. These drawings, which are extremely well executed, were transmitted to this country by the ingenious ladies, in order to have the species ascertained which had most struck their fancy in that land of remarkable productions.

5. *Notice on the adhesion of Lepas or Barnacle to Fuci &c.* by Mr. Edmonston; with a specimen communicated by Mr. Archibald Gibson, Accountant.—Some observations were made by Mr. Edmonston and others with regard to this parasite, which at one time was popularly regarded as the veritable origin of the barnacle goose.

6. Mr. Edmonston read a letter from Mr. P. J. Brown, of Thun, respecting the three species of primroses usually considered to exist in this country. He says—"Against Sir James Smith's opinion (in Rees's Cyclopedia), that *Primula elatior* may be a mule between *veris* and *vulgaris*, I may observe that the three are not often the inhabitants of the same district,—*veris* is almost universally diffused; but where *vulgaris* is very abundant, I have rarely seen *elatior* in any quantity, and by far the most frequently not at all; while in general, as is the case at Thun, *elatior* grows by thousands in places within many leagues of which *vulgaris* is absolutely unknown. *P. vulgaris* contents itself with an elevation but little above the level of the sea, although in the neighbourhood of the Lake of Geneva it is in perfect condition at from 1200 to 1500 feet; but at Thun, with an elevation of 1900 feet, it languishes, whether planted in a thicket, on a bank, or in a garden; while *elatior*, being more aspiring, prefers an elevation of from 1500 to 2000 feet, and although willingly climbing beyond the latter, descends reluctantly below the former level.

Professor Balfour (of Glasgow) made observations on the distinctions among the genera of Ferns—*Anemia, Mohria, Coptophyllum, Trochopteris* and *Schizæa*, some of which had been recently established by Mr. Gardner. The Professor next alluded to the various theories which have been advanced to account for the origin of woody fibre, and more especially to that of Du Petit Thouars. He showed by sections of palms that the interlacing of the fibres in Endogenous plants was quite in conformity with Du Petit Thouars' theory, and that the appearance of the woody matter in tree ferns, and in the natural orders *Piperaceæ, Aristolochiaceæ*, and the formation of roots externally in screw pines, Vellosias, &c., all supported the theory of wood being formed by the development of fibres from buds acting as fixed embryos. Dr. Balfour also endeavoured to show that the formation of what have been called by Dutrochet *embryo buds*, may, in many cases, be accounted for by the development of leaves on them at one period of their growth; and that on examining some others which he exhibited, the woody matter might be traced communicating with the alburnum, at one point by rupture of the bark, and insinuating itself between the layers of bark.—*Id. March* 16, 1842.

BOTANICAL SOCIETY OF LONDON.

February 18.—Dr. Willshire in the Chair. The following donations were announced. Specimens of *Ulva? calophylla*, found on the coping of a wall in Banbury Churchyard by Mr. Thomas Beesley, and presented by him: foreign plants from Mr. R. J. Shuttleworth, Professor Meisner, Mr. J. D. Salmon, and The Rev. Christian Munch: British plants from the Botanical Society of Edinburgh and Miss Moxon: British mosses from Mr. G. H. K. Thwaites: books from Mr. R. J. Shuttleworth and Mr. Thomas Beesley. A paper was read from Henry Oxley Stephens, Esq., being "Notes on *Epilobium angustifolium* and *Epilobium macrocarpum.*" Since the publication of Mr. Leighton's papers on these plants in the 'Annals of Natural History,' Mr. Stephens had received a communication from Sir W. J. Hooker, in which he stated that the characters pointed out by Mr. Leighton and Mr. Stephens did not seem sufficient to constitute a species; and subsequently Mr. S. states that his *macrocarpum* is the *angustifolium* of Linnæus. Dr. Willshire offered some remarks "On *Adelia nereifolia*," and exhibited its structure by means of the microscope.—*G. E. D.*